

SUPPLY CHAIN MANAGEMENT IN BAMBOO CRAFTS BUSINESS IN JEMBER DISTRICT (CASE STUDY IN KUB ANDRIKA JAYA AND KUB IDA JAYA)

Sumadi¹, Rediyanto Putra², Retno Murwanti³

¹ Public Sector Accounting Program Study, Politeknik Negeri Jember, Jl. Mastrip PO BOX 164 Jember, East Java, Indonesia

²Accounting Departement, Universitas Negeri Surabaya, Jl. Ketintang No. 2 Surabaya City, East Java, Indonesia

³Accounting Program Studi, Economy Faculty, Universitas Muhammadiyah Jember, Jl. Karimata No.49, Jember, East Java, Indonesia

madidhea57@gmail.com

Abstract. This study aims to identify the form of supply chain management practice models that exist in the bamboo handicraft business in Jember Regency. This research uses KUB Andrika Jaya and Ida Jaya because both bamboo businesses have been in business for more than 20 years. The data used in this study were collected using interview and documentation methods which were further processed qualitatively analytical descriptive. The results of the research that have been carried out show that the supply chain practice models that exist in KUB Andrika Jaya and Ida Jaya are not as complicated as what happens in large companies in general. The supply chain that occurs only consists of bamboo farmers, bamboo craftsmen, retail traders / direct consumers. The problem experienced in supply chain practices is only due to the weather when entering the rainy season because many bamboos have difficulty drying out, resulting in fewer products.

1. INTRODUCTION

Every activity of a company or individual has its supply chain based on the complexity of the business undertaken. Supply chains reach the production network, starting from raw materials, manufacturing processes, and even distribution. The supply chain includes all activities from the arrival of material from suppliers which are then processed into semi-finished products until the product reaches the end consumer. The process of the network in the supply chain must be managed properly so that the final product produced can have a quality that is by following the wishes of consumers.

The process of managing the supply chain of products is then often referred to as Supply Chain Management (SCM). SCM is a network of a company that together work to produce and deliver products to end consumers [1]. Supply Chain Management is an interesting topic because SCM will be able to create cheap products but of high quality and fast. Therefore, there are a lot of studies that conduct research related to this topic.

The SCM process in bamboo business activities in Indonesia is also an interesting topic to discuss. This is because the bamboo handicraft industry has long been growing and developing in Indonesian society. The types of products are very diverse and many of them are interested in abroad. Therefore these product requirements are increasingly tightened in trade contacts, ranging from product specifications, quality, standard sizes to the deadline for product delivery. Almost all bamboo

products are formed by woven, especially for household appliances and decoration. So that the quality and competitiveness of its products depends on the fineness and evenness of the slices.

During the period 2005-2010, the value of bamboo exports has always experienced a significant increase (51.4% on average). Indonesia's export destinations are Asia (\$ 1,367,000), Europe (\$ 426,000), North and Central America (\$ 363,000) and South America (\$ 320,000). The value of exports which experienced a significant increase shows that there are still open markets with considerable potential abroad. Seeing these conditions, it is still wide open to fill world market opportunities that are very good and potential. This provides an opportunity for the bamboo craftsman industry in Indonesia.

Based on these explanations, it is hoped that the development of bamboo businesses in Indonesia will increase and have good opportunity for bussiness industry. This article will try to look at the opportunities for developing bamboo businesses in Jember Regency from the SCM aspect that occurred. This article will look at SCM activities in one of the groups of bamboo craftsmen who consistently produce in Jember Regency are the KUB "Andrika Jaya" and KUB "Ida Jaya" craftsmen domiciled in Antirogo Village - Sumpersari District - Jember. The purpose of this study is to provide an understanding of the supply chain management that occurs in KUB Andrika Jaya and Ida Jaya and identify the process of sharing information that occurs in it. Thus, it can be seen how KUB Andrika Jaya and KUB Ida Jaya run and maintain their business for a period of 20 years.

2. THEORITICAL REVIEW

This article on supply chain management in KUB Andrika Jaya and Ida Jaya is based on several conceptual explanations and some relevant previous research. The basic concept used in this research is supply chain management and the results of several previous studies. The following is a more complete explanation of the concepts and results of previous studies used in this study.

2.1. Supply Chain Management

Supply chain management (SCM) is a system of channeling the production of goods or services that exist in an organization to consumers [2]. The concept of a supply chain to this day has become an established concept in a variety of literature. The concept of a supply chain is also referred to as aligning the distribution of products or services to the market [3]. The concept of supply chain management explains the hardening of products or services to the market because supply chains include producers, suppliers, transporters, warehouses, wholesalers, retailers, other intermediaries, and consumers.

Supply chain flow in an organization has three different types of levels determined by the level of complexity. The supply chain flow is a direct supply chain, extended, and the main supply [4]. The following figure describes the flow of the three types of supply chain levels.

Supplier ↔ Organization ↔ Customer

Figure no. 2a: Direct Supply Chain

Supplier's Supplier ↔ Supplier ↔ Organization ↔ Customer ↔ Customer's Customer

Figure no. 2b: Extended Supply Chain

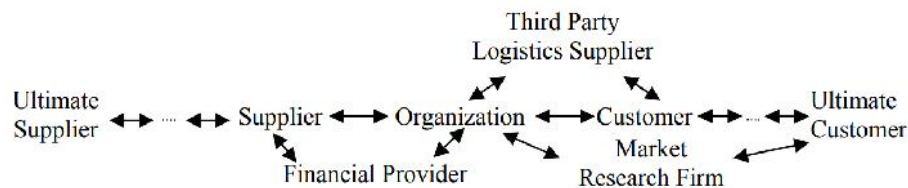


Figure no. 2c: Ultimate Supply Chain

Figure 1. Type of Supply Chain Flow

2.2. Prior Research

Research related to supply chain management has been done by several studies. The previous studies that were used as references in this study are as follows;

Table 1. Previous Research

Name	Method	Result
Munawir et al (2015)	This study conducted a descriptive analysis of the supply chain network in the birdcage craft business in Surakarta	The results showed that most of the birdcage industry is domestic and the supply chain network is still long. This supply chain network can be improved by making purchases to suppliers, craftsmen making products up to finishing, and craftsmen utilizing online media to make sales
Purwatmini (2015)	The research conducted was desk research which was then developed into a development research application of SCM for the creative industries based on the ceramic industry in Indonesia.	The results found that the ceramic industry tried to maintain its business by implementing SCM to create efficiency in terms of cost. SCM which is applied to ceramics business is divided into two namely supply and distribution. The supply side is done by creating cooperation with a few suppliers and in the long term. Furthermore, the application of SCM on the distributor side is carried out with special collaboration to serve durable and large volume products such as JNE.
Sengka et al (2015)	The method used in this research is descriptive qualitative analysis. This method is used to provide an overview or explanation of aspects of information flow or how to share information from each party involved in a business.	The results of this study indicate that the parties involved are bamboo farmers, craftsmen/sellers and consumers and how to share information between parties involved in bamboo woven crafts still use the telephone or face-to-face media (direct communication). We recommend that leaders of bamboo woven crafts use e-commerce-based marketing systems that use the internet to market their products so that more people know about the existence of the products.
Nainggolan (2017)	This research uses a descriptive qualitative method which is exploratory.	The results of this study found two things: (1) the implementation of the supplier strategy in West Surabaya MSMEs using a strategy with 1 supplier at 10%, 2 and 3 suppliers at 40%, and 4-5 suppliers at 10%. Furthermore, MSMEs in West Surabaya use 4 supply chain management models, namely supplier-producer-consumer, supplier-producer-retailer-consumer, supplier-distributor-customer, and supplier-retailer-consumer.
Nggili & Katayane (2017)	This research is qualitative research using interview and documentation techniques. Data validation conducted in this study is to use direct observation and triangulation techniques.	The results show that the application of SCM in the precious stone business in Salatiga includes two types, namely from suppliers to resellers and ends at consumers and from suppliers to consumers, and back to resellers as experts in improving the quality of product values. From the two current approaches, it appears that there is a unified SCM process that is realized by each SCM chain, as part of maintaining the sustainability of the precious stone market in Salatiga. The flow of SCM is also supported by other supporting factors as an integral part such as integration, openness and information sharing, the main supporters of special items in the precious stone SCM process in Salatiga.

3. METHOD

The implementation of this activity will be carried out by involving several parties, namely KUB "ANDRIKA JAYA" and KUB "Ida Jaya" as SMEs who are willing to cooperate. Both of these UKM is UKM that produces bamboo handicrafts in Antirogo Village - Summersari District - Jember, which started their business since 1999. The types of data used are primary data and secondary data. Primary data is data obtained directly at KUB Andrika Jaya and KUB Ida Jaya, while secondary data is data obtained from documents owned by KUB Andrika Jaya and Ida Jaya. The data used in this article was obtained through 3 techniques namely field surveys, interviews, and documentation.

Data analysis was performed using descriptive analysis. The analysis conducted is related to the supply chain management network in KUB Andrika Jaya and Ida Jaya. Network analysis is to start the flow of raw materials obtained from suppliers, the processing of raw materials into bamboo handicraft products in various forms. Next, the network analysis continues until the marketing process of the products that have been produced.

4. RESULT & DISCUSSION

4.1. Profile of KUB Andrika Jaya and KUB Ida Jaya

Andrika Jaya KUB UKM is a bamboo handicraft UKM which is technically professional and has run its business. This is reflected in the results of the implementation of technical work in the field with clear quality. Besides that, this UKM has experience in making various kinds of wooden handicraft business for more than 25 years. This UKM is in Antirogo Village, Summersari District, Jember Regency. KUB Andrika Jaya has 7 active members, led by Mr. Andri. KUB Andrika Jaya UKM has approximately 20 types of bamboo handicraft products that are sold with a heating and consignment system which covers several sales areas, namely local in Jember Regency, Regional in East Java Province and other provinces, and abroad. KUB Andrika Jaya every month can produce a turnover of about 2 to 10 million.

The second UKM is IUB Jaya KUB is a bamboo handicraft UKM which is technically professional and has run its business. This is reflected in the results of the implementation of technical work in the field with clear quality. Besides that, the UKM has experience in making various kinds of wooden handicraft business for more than 20 years. This UKM is in Antirogo Village, Summersari District, Jember Regency. KUB Andrika Jaya has 10 active members, led by Mr. Suroso. KUB Andrika Jaya UKM has approximately 10 types of bamboo handicraft products that are sold by direct, heating and consignment systems covering several sales areas, namely local in Jember Regency, Regional in East Java Province and other provinces, and abroad. KUB Andrika Jaya every month is able to produce a turnover of about 2 to 10 million.



Figure 2. KUB Andrika Jaya and KUB Ida Jaya

4.2. Business Process and Supply Chain at KUB Andrika Jaya and KUB Ida Jaya

KUB Andrika Jaya and KUB Ida Jaya are two bamboo handicraft businesses that have carried out business activities for a long time. The business processes carried out by both involve several parties in it, such as bamboo farmers, retail traders, shipping services, and consumers. Figure 3 below summarizes the business processes that took place at KUB Andrika Jaya and KUB Ida Jaya.

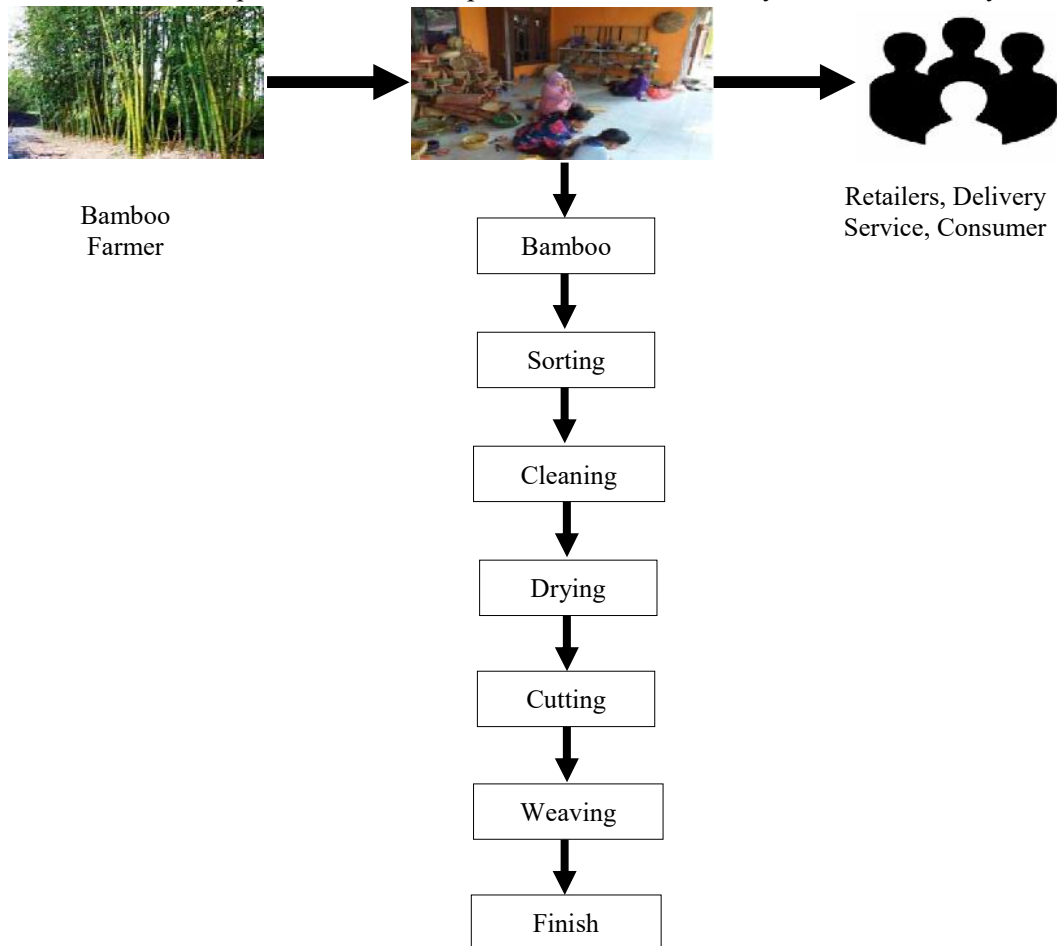


Figure 3. Business Process of KUB Andrika Jaya and Ida Jaya

The business process that occurred at the KUB Andrika Jaya and Ida Jaya in figure 3 concluded that there was a type of direct and extended supply chain management. This is because supply chain management that occurs at KUB Andrika Jaya and Ida Jaya do not always end immediately at the end consumer. The cause of this form of the supply chain is due to the production process of handicrafts at KUB Andrika Jaya and Ida Jaya, which use several types, namely ordering, consignment, and direct purchasing.

The practice of producing handicrafts that are sold directly occurs when the final consumers in the Jember Regency and surrounding areas directly place an order and take the finished product. This sales process occurred at KUB Ida Jaya so that KUB Ida Jaya only carried out the process of purchasing bamboo from bamboo farmers as the main supplier of bamboo handicraft raw materials. The bamboo that has been obtained is then processed into workmanship through six stages: sorting, cleaning, drying, cutting, and weaving. After the product is finished, the product will be directly taken by the consumer. This condition causes the direct model SCM form from KUB Andrika Jaya and KUB Ida Jaya. The SCM model directly consists of companies, suppliers, and customers involved in

upstream and downstream products, services, finance, and / or information [4]. Based on this, the supply chain flow occurs as follows.

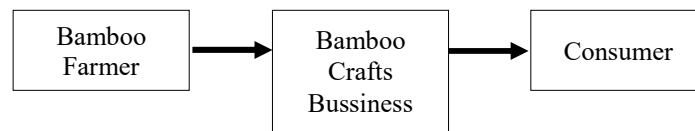


Figure 4. Supply Chain Flow Model 1

The extended supply chain practices at KUB Andrika Jaya and KUB Jaya occur when the sales process is carried out as special order and consignment. KUB Andrika Jaya and KUB Ida Jaya carry out a special sales process when consumers who order are consumers outside of Jember Regency, outside East Java Province, or abroad who need delivery services to process goods delivery. Based on interviews conducted showed that KUB Andrika Jaya and KUB Ida Jaya use expedition services such as JNE, J&T, Dakota, and the like to carry out the process of shipping goods. Based on this, the supply chain has occurred on the distribution side. This condition shows the extended SCM model at KUB Andrika Jaya and KUB Ida Jaya. An extended supply chain includes suppliers of the immediate supplier and customers of the immediate customer, all involved in the upstream and/or downstream flows of products, services, finances, and/or information [4]. The supply chain flow picture is shown in Figure 5 below

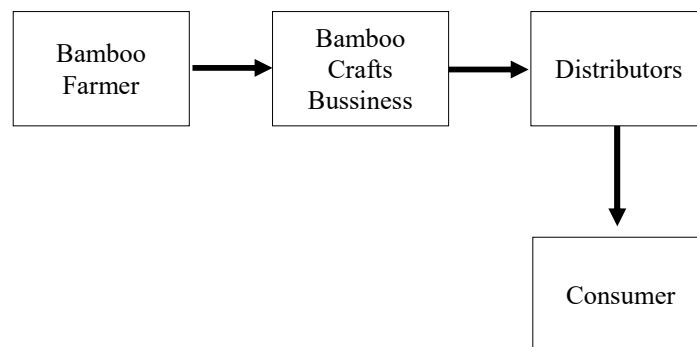


Figure 5. Supply Chain Flow Model 2

The second extended supply chain then occurred at the KUB of Andrika Jaya and Ida Jaya when the consignment sales process of the bamboo handicraft was produced. KUB Andrika Jaya and Ida Jaya claimed that the bamboo products produced were also marketed through retail traders in traditional markets, one of which in Jember Regency was Tanjung Market. KUB Andrika Jaya and KUB Ida Jaya conduct consignment sales to retail traders who have long cooperated with their businesses by depositing them at stalls owned by the retail traders. Based on this, the final model of the supply chain flow in KUB Andrika Jaya and Ida Jaya is as shown in Figure 6 below.

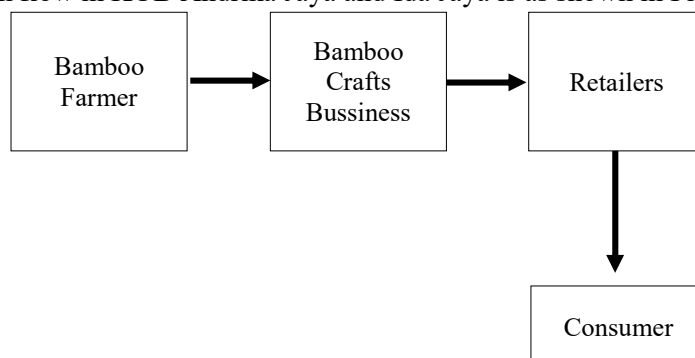


Figure 6. Supply Chain Flow Model 3

The supply chain process that occurs at KUB Andrika Jaya and Ida Jaya will always lead to a process of sharing information both between bamboo farmers and businesses, businesses and retailers, businesses with shipping services, as well as businesses and consumers. The information-sharing process that occurs to all parties involved in the supply chain flow of KUB Andrika Jaya and Ida Jaya covers various important aspects related to the product. The process of sharing information consists of two types, namely quality and quantity, where these two aspects determine the extent to which the confidentiality of a business is communicated to business partners in the supply chain [6]. Table 2 below explains what information is distributed to parties in the supply chain flow of KUB Andrika Jaya and KUB Ida Jaya.

Table 2. Sharing information on SCM KUB Andrika Jaya and KUB Ida Jaya

Farmer→Business	Business→Consumer	Business→ Delivery Service	Business→ Retailers
The desired amount of bamboo	The type and model of bamboo handcraft desired	Address and product delivery destination	Product sales process agreement rules
Bamboo filling time	Number of orders for bamboo crafts	Time to product to the destination	The number of times the product was taken for a certain time
Price of buying bamboo	The time and purpose of product delivery Price and payment method	Price of shipping services Product safety from damage	

Table 2 above shows the information shared between the parties involved in the supply chain flow at KUB Andrika Jaya and Ida Jaya. Based on this information, negotiations will eventually take place, which will result in mutual agreement. KUB Andrika Jaya and KUB Ida Jaya claimed that until now there had never been a problem between the parties involved. Problems in the supply chain flow are caused by natural factors such as weather and living things.

The first problem that occurs is related to the low level of durability of handicraft products which results in fewer quality products. Handicraft products made from bamboo are very susceptible to mold and powder, thereby reducing the level of product durability. This condition is caused by the standardization of the quality of raw materials that are not given enough attention, in addition to the handling of raw materials, there is also no preservation process. As a result, bamboo handicraft products are easily attacked by 'blue' mushrooms and powder. Often the product has not been sent to the fungus, thus reducing the quality of the product. Especially if the product is marketed to foreign countries with different air climates from Indonesia, it often gets complaints or is rejected

The second problem that occurs is related to drying the raw material is not done perfectly. Drying of raw materials is done by drying by relying on sunlight. As a result, drying time is very long with not optimum results. When the rainy season production can be stopped because of raw materials that do not meet the standard drought. This condition results in decreased product quality, especially in the rainy season and handicraft products are vulnerable to 'blue' mold due to very high humidity. Therefore, bamboo drying technology (oven) is needed to speed up drying and not depend on sunlight. With the oven, the product quality is more guaranteed and faster production to improve the production process.

5. CONCLUSSION

This article aims to find out how the practice of implementing supply chain management occurs at KUB Andrika Jaya and KUB Ida Jaya. The results of the research that have been conducted show that KUB Andrika Jaya and KUB Ida Jaya implement Supply Chain Management with three types, namely (1) supplier-craftsman-consumer, (2) supplier-craftsman-retailer-consumer, and (3) supplier-craftsman

-distributors-consumers. KUB Andrika Jaya and KUB Ida Jaya apply the three types of SCM according to the type of product produced. Models 1 and 3 are used if the products produced are products ordered directly by consumers, while model 2 applies to products that are mass-produced and sold. The results of the study also showed that so far the businesses of KUB Andrika Jaya and KUB Ida Jaya experienced obstacles in their SCM network only due to weather conditions that could affect the level of bamboo that could be obtained.

The results of the study can be accepted by taking into account some limitations that are owned. The expertise in this article can be used as reference material for further research to make improvements to produce better research. Existing expertise in this study is the limitation of research time that is too short so that the process of observation and interviews for data mining is less than optimal. Thus, further research is expected to be able to research with a longer period to be able to conduct interviews and observations for a long time. The goal is to be able to find directly the factors that become disturbances in each network, to be able to provide suggestions for improvement to improve the quality of the business understudy.

6. REFERENCES

- [1] Pujawan, I. N.. 2010. *Supply chain management: Edisi Kedua*. Surabaya : Guna Widya
- [2] Munawir, H., Kuswardhana, A., Nandiroh, S. 2015. Analisis Supply Chain Management Industri Kerajinan Sangkar Burung di Surakarta. *Seminar Nasional Teknologi Terapan (SNTT) 3*
- [3] Lambert, D.M., Stock, J.R. & Ellram, L. M., 1998. *Fundamentals of Logistics Management*. Boston: Irwin/McGraw-Hill.
- [4] Mentzer, J.T., DeWitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D. & Zacharia, Z.G., 2001. Defining Supply Chain Management. *Journal of Business Logistics*, 22 (2), pp. 1-25
- [5] Purwatmini, N. 2015. Peran Manajemen Rantai Pasokan (“Supply Chain Management”)Bagi Industri Kreatif Berbasis Industri Keramik. *Jurnal Administrasi Kantor*, 3 (2), pp. 525-538
- [6] Sengka, R.R., Taroreh, R., N., & Palandeng, I., D. 2015. Identifikasi Information Sharing dalam Supply Chain Management (Studi Pada Kerajinan Anyaman Bambu di Kota Tomohon). *Jurnal EMBA*, 3(2), pp. 205-212
- [7] Nainggolan, R .2017. Model Manajemen Rantai Pasokan Pada Umkm Surabaya. *Proceedings Roundtable for Indonesian Entrepreneurship Educator ke-5*
- [8]Nggili, R.A. & Katayane, R.R .2017. Supply Chains Management (SCM) Batu Mulia Khas Nusantara di Kotamadya Salatiga. *Jurnal Manajemen Teori dan Terapan*, 10 (2), pp. 169-186

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